infrared triangulation, a global positioning system, etc,

which all could be used to track the positional changes of the

user's eyes. Head position tracker 14 may be a face tracker.

The face tracker takes a video image of a user's face as the

5   face moves. The invention is also not limited for use in 3D

space, but rather can be used in N-dimensional space (N≥3).

The invention is not limited to the specific processing order

of FIG. 2. Rather, the blocks of FIG. 2 may be re-ordered, as

necessary, to achieve the results set forth above.

10   Other embodiments not described herein are also within

the scope of the following claims.

What is claimed is:

1. A method of displaying a virtual three-dimensional (3D) scene, comprising:

tracking a positional change of a head of a user with respect to a display;

5   transforming the virtual 3D scene in accordance with the positional change of the head; and

projecting on the display a transformed virtual 3D scene.

2. The method of claim 1, wherein transforming the

10 virtual 3D scene comprises shifting the virtual 3D scene in a left direction of the user when the head moves in a right direction of the user.

3. The method of claim 2, wherein transforming the

15 virtual 3D scene comprises shifting the virtual 3D scene in a right direction of the user when the head moves in a left direction of the user.

4. The method of claim 3, wherein the camera is attached

20 to the display.

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5.   The method of claim 1, wherein transforming the virtual 3D scene comprises increasing a magnification of the virtual 3D scene when the head moves toward the display.

6.   The method of claim 5, wherein transforming the virtual 3D scene comprises reducing the magnification of the virtual 3D scene when the head moves away from the display.

7.   The method of claim 5, wherein the camera is positioned above the display.

8.   The method of claim 3, wherein the virtual 3D scene is shifted with respect to the head by a factor of 10.

9.   The method of claim 1, wherein tracking the positional change of the head further comprises tracking an iridescent color in an object attached to the head.

10.   The method of claim 1, wherein transforming the virtual 3D scene comprises decreasing a magnification of the 3d scene when the head moves toward the display and increasing the magnification of the 3D scene when the head moves away from the display.

11. An apparatus for displaying a virtual three-dimensional (3D) scene, comprising:

a memory that stores executable instructions; and

5   a processor that executes the instructions to:

track a positional change of a head of a user with respect to a display;

transform the virtual 3D scene in accordance with the positional change of the head; and

10   project on the display a transformed virtual 3D scene.

12. The apparatus of claim 11, wherein to transform the virtual 3D scene comprises to shift the virtual 3D scene in a
15   left direction of the user when the head moves in a right direction of the user.

13. The apparatus of claim 12, wherein to transform the virtual 3D scene comprises to shift the virtual 3D scene in a
20   right direction of the user when the head moves in a left direction of the user.

14. The apparatus of claim 13, wherein the camera is attached to the display.

15. The apparatus of claim 11, wherein transforming the virtual 3D scene comprises increasing a magnification of the virtual 3D scene when the head moves toward the display.

16. The apparatus of claim 15, wherein transforming the virtual 3D scene comprises reducing the magnification of the virtual 3D scene when the head moves away from the display.

17. The apparatus of claim 15, wherein the camera is positioned above the display.

18. The apparatus of claim 13, wherein the virtual 3D scene is shifted with respect to the head by a factor of 10.

19. The apparatus of claim 11, wherein to track the positional change of the head further comprises to track an iridescent color in an object attached to the head.

20. The apparatus of claim 11, wherein to transform the virtual 3D scene comprises to decrease a magnification of the

3d scene when the head moves toward the display and to increase the magnification of the 3D scene when the head moves away from the display.

5   21.   An article comprising a machine-readable medium that stores executable instructions for displaying a virtual three-dimensional (3D) scene, the instructions causing a machine to:

track a positional change of a head of a user with respect to a display;

10   transform the virtual 3D scene in accordance with the positional change of the head; and

project on the display a transformed virtual 3D scene.

22.   The article of claim 21, wherein to transform the

15   virtual 3D scene comprises to shift the virtual 3D scene in a left direction of the user when the head moves in a right direction of the user.

23.   The article of claim 22, wherein to transform the

20   virtual 3D scene comprises to shift the virtual 3D scene in a right direction of the user when the head moves in a left direction of the user.

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24. The article of claim 23, wherein the camera is attached to the display.

25. The article of claim 21, wherein to transform the virtual 3D scene comprises to increase a magnification of the virtual 3D scene when the head moves toward the display.

26. The article of claim 25, wherein to transform the virtual 3D scene comprises to reduce the magnification of the virtual 3D scene when the head moves away from the display.

27. The article of claim 25, wherein the camera is positioned above the display.

28. The article of claim 23, wherein the virtual 3D scene is shifted with respect to the head by a factor of 10.

29. The article of claim 21, wherein to track the positional change of the head further comprises to track an iridescent color in an object attached to the head.

30. The article of claim 21, wherein to transform the virtual 3D scene comprises to decrease a magnification of the

3d scene when the head moves toward the display and to

increase the magnification of the 3D scene when the head moves

away from the display.

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